AF/2632

#13 add Petition W/D Abandonment 11-25-03

MS APPEAL BRIEF - PATENTS
PATENT
0505-0841P

IN THE U.S. PATENT AND TRADEMARK OFFICE

In re application of		Before the Board of Appeals	
Kunihiko FUKUI		Appeal No.:	
Appl. No.:	09/902,711	Group:	2632
Filed:	July 12, 2001	Examiner:	D. Goins
Conf.:	1542		
For:	OIL EXCHANGE TIME INDICATING APPARATUS FOR VEHICLES		

APPEAL BRIEF TRANSMITTAL FORM

MS APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

August 18, 2003

Sir:

Transmitted herewith is an Appeal Brief (in triplicate) on behalf of the Appellants in connection with the above-identified application.

☐ The enclosed document is being transmitted via the Certificate of Mailing provisions of 37 C.F.R. § 1.8.

A Notice of Appeal was filed on April 17, 2003.

☐ Applicant claims small entity status in accordance with 37 C.F.R. § 1.27

The fee has been calculated as shown below:

☒ Extension of time fee pursuant to 37 C.F.R. §§ 1.17 and 1.136(a) - $410.00 - two (2) months (large entity)

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☒ Check(s) in the amount of $730.00 is(are) attached.

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02 FC:1252 410.00 OP

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment(s)

(Rev. 08/11/03)

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BRIEF ON BEHALF OF APPELLANTS

MS APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

August 18, 2003

Sir:

This is an Appeal from the Final Rejection of Claims 1-18 in the above-identified application, which claims were finally rejected in the Office Action dated December 11, 2002.

I. STATUS OF THE CLAIMS

Claims 1-18 have been finally rejected by the Examiner in connection with the above-identified application. Claims 1-18 are set forth in the attached Appendix.

II. STATUS OF AMENDMENTS

No amendment has been filed subsequent to the Final Rejection.

III. SUMMARY OF THE INVENTION

The disclosed and claimed invention is an apparatus for indicating to the operator of a vehicle that an oil change is advisable, based upon factors that are indicative of the degree of degradation of the oil. To ascertain the degradation of the oil, the apparatus employs an odometer for integrating travel distances of the vehicle and a timer for integrating operating times of an engine mounted on the vehicle. The apparatus also employs an indicator for informing the vehicle operator that an oil change is advisable and a controller for activating the indicator when either the integrated travel distances or the integrated operating times exceeds a preset value.

As shown schematically in drawing Fig. 1, odometer 1 and operation time integrator 2 are both connected to microcomputer 4, which functions as the controller. An indicator panel I mounted on the vehicle, also connected to the controller, includes an oil exchange informing means 3 having an OIL CHANGE indicator.

Referring to the flow chart of Fig. 2 and the description beginning in paragraph 0019, in step S1, the controller compares an integrated value L of travel distances received from the odometer with a stored preset value L1. In step S2, the controller compares an integrated value T of engine operation times received from the operation time integrator with a stored preset value T1. The stored preset value L1 is derived from a known relationship between travel distance and degradation of the oil, and the stored preset value T1 is derived from a known

relationship between engine operation time and degradation of the oil.

In step S1, if value L is found to be greater than value L1, step S3 is executed, and the OIL CHANGE indicator is illuminated. In step S2, if value T is found to be greater than value T1, step S3 is executed, and the OIL CHANGE indicator is illuminated. Thus, either of the comparisons performed in steps S1 and S2 can effect the illumination of the OIL CHANGE indicator. As described in paragraph 0022, the odometer and the operation time indicator operate when the vehicle engine is started, and the comparisons performed in steps S1 and S2 are carried out continuously.

As described in paragraph 0026, a plurality of preset values for travel distance and engine operating time can be stored. As an example, preset value L2, greater than L1, and preset value T2, greater than T1, can be stored.

In step S4, if the vehicle operator actuates a reset switch to indicate that an oil change has been performed, steps S5 and S6 are executed, wherein the controller rewrites preset value L1 to L2 and preset value T1 to T2. Thereafter, in steps S7 and S8, the controller compares the integrated value L of travel distances with greater stored preset value L2 and compares the integrated value T of engine operation times with greater stored preset value T2. As in steps S1 and S2, if value L is found to be greater than value L2, or if value T is found to be greater than value T2, step S9 is executed, and the OIL CHANGE indicator is illuminated.

IV. ISSUES

The single issue presented in this appeal is whether claims 1-18 are unpatentable over Mc Donald et al. (U.S. patent No. 6,327,900 B1) in view of Raffa et al. (U.S. patent No. 5,382,942) under 35 USC §103(a).

V. GROUPING OF CLAIMS

The patentability of claims 3, 4, 6, 8, 12, 13, 15 and 17 is regarded as subordinate to the patentability of the claims from which they depend.

VI. APPELLANTS' ARGUMENTS

The Rejection of Claims 1-18 Under 35 USC §103(a)

This rejection is stated on pages 2-3 of the Final Rejection, which refers to the statement of the same rejection in the June 5, 2002 first Office Action (pages 2-13).

Referring to the rejection of claim 1, as stated on pages 2-4 of the first Office Action, the Examiner asserts that "the claimed operation time integrator means for integrating operation times of an engine mounted on the vehicle … is met by [the McDonald et al. disclosure of] the calculation of remaining oil life is (sic) updated over a predetermined interval which may be measured either in terms of time or in terms of elapsed engine revolutions …" As support for this contention, the Examiner cites column 4, lines 42-49, and column 5, lines 39-46 of the McDonald et al. patent. The Examiner also states that "the claimed oil exchange informing means for informing a user of exchange timing

of oil … is met by [the McDonald et al.] indicator 24 used to advise the operator of the need to change the oil …" and cites column 3, lines 42-50, of the McDonald et al. patent. The Examiner also states that "… the claimed controlling means … is met by [the McDonald et al.] controller 14 including microprocessor 26 used to compute the useful life of the engine oil by monitoring the number of engine revolutions …" The Examiner cites column 5, lines 1-6, and column 6, lines 24-33 of the McDonald et al. patent, apparently as disclosure that meets the claimed requirement for an integrated value of the travel distances as a determinant for the activation of the oil exchange informing means. The Examiner concedes that the McDonald et al. patent "… does not specifically disclose the claimed odometer means for integrating travel distances of the vehicle or the controlling means for starting based on a signal from the odometer …," adding that McDonald et al. "… does disclose a controller 14, including microprocessor which monitors the number of engine revolutions to assume a value, which becomes nearly constant as a function of time or distance traveled, and then determine the remaining useful life of the engine oil." As a remedy for this deficiency in McDonald et al., the Examiner proposes incorporating in the McDonald et al. system "an odometer means, as disclosed by Raffa, to provide a more accurate measurement of the distance traveled by the vehicle which will help give a more accurate indication as to the amount of engine oil."

In the rejection of claim 2, as stated on pages 4-5 of the first Office Action, the Examiner seems to take the position that the recited limitations are satisfied by the "controller 14 including a microprocessor 26."

In the rejection of claim 3, as stated on page 5 of the first Office Action, the Examiner takes the position that the recited limitations are satisfied by the McDonald et al. "reset switch 22."

In the rejection of claim 4, as stated on page 5 of the first Office Action, the Examiner points out McDonald et al. indicator 24 and suggests modifying the indicator to incorporate a light, per the disclosure in the Raffa et al. patent.

In the rejection of claim 5, as stated on page 6 of the first Office Action, the Examiner seems to take the position that the recited limitations are satisfied by the "controller 14 including a microprocessor 26."

In the rejection of claim 6, as stated on page 6 of the first Office Action, the Examiner points to column 6, lines 24-33, of the McDonald et al. patent as a disclosure that meets the recited limitations.

In the rejection of claim 7, as stated on page 7 of the first Office Action, the Examiner seems to take the position that the recited limitations are satisfied by the McDonald et al. disclosure wherein "the remaining useful life of the engine oil is calculated by measuring the engine revolutions ..."

In the rejection of claim 8, as stated on page 7 of the first Office Action, the Examiner points to column 5, lines 1-6,

of the McDonald et al. patent as a disclosure that meets the recited limitations.

In the rejection of claim 9, as stated on page7 of the first Office Action, the Examiner points to column 4, lines 50-67, and column 5, lines 1-6, of the McDonald et al. patent as disclosure that meets the recited limitations.

The rejection of claim 10, as stated on pages 8-9 of the first Office Action, and the rejection of claim 1, as outlined above, are very similar.

The rejection of claim 11, as stated on pages 9-10 of the first Office Action, is like the rejection of claim 2, as outlined above.

The rejection of claim 12, as stated on page 10 of the first Office Action, is like the rejection of claim 3, as outlined above.

The rejection of claim 13, as stated on pages 10-11 of the first Office Action, is like the rejection of claim 4, as outlined above.

The rejection of claim 14, as stated on page 11 of the first Office Action, is like the rejection of claim 5, as outlined above.

The rejection of claim 15, as stated on page 12 of the first Office Action, is like the rejection of claim 6, as outlined above.

The rejection of claim 16, as stated on page 12 of the first Office Action, is like the rejection of claim 7, as outlined above.

The rejection of claim 17, as stated on page 12 of the first Office Action, is like the rejection of claim 8, as outlined above.

The rejection of claim 18, as stated on pages 12-13 of the first Office Action, is like the rejection of claim 9, as outlined above.

In the response to the first Office Action, filed on October 7, 2002, Appellant traversed the rejection of claims 1-18, arguing that "operation time integrator means" and "an operation timer," as recited in claims 1 and 10, respectively, were not satisfied by the disclosures in the McDonald et al. patent that the Examiner cited. Appellant pointed out that the "predetermined interval," as used in the McDonald et al. patent, is simply a time period during which an assessment of engine revolutions, engine oil temperature and engine oil contamination is performed and that assessments performed during these time periods do not yield data reflecting the time that the engine has been in operation.

In the Final Rejection, the Examiner stated in response to Appellant's arguments, "McDonald clearly shows in box 210 of Fig. 2 that engine operation is sensed for a predetermined interval of time, which operation is particularly referred to at col.5, lines 39-45. The Examiner continued, "Appellant seems to be implying that his system senses the total time that the engine has been in operation (page 4). However, no such limitation is included in independent claims 1 or 10 referring to a total engine time since start of vehicle operation, and thus McDonald satisfies the

requirement of sensing integrated engine operation time over a predetermined period."

In the response to the Final Rejection, filed on March 11, 2003, Appellant again took issue with the Examiner's interpretations of a "predetermined interval" as used in the McDonald et al. patent, arguing that "integrating" followed by "operating times" in claim 1 signifies that an accumulated value from more than one operating time is determined. Appellant also argued that the system disclosed in the McDonald et al. patent does not perform the function of "integrating operating times" and does not incorporate a "controlling means" that uses "an integrated value of the operation times" as a factor for starting the "oil exchange informing means," as required by claim 1. As to claim 10, Appellant argued that the McDonald et al. system does not include any elements that can fairly meet the recited requirements for "an operational timer" and "a controller" and that, in particular, there is no "operational timer" in the McDonald et al. system that generates a "time of operation signal," and there is no "controller" in the McDonald et al. system that uses "time of operation" as a factor for "providing a signal to the oil exchange indicator.

In the Advisory Action dated March 28, 2003, the Examiner stated in response to Appellant's arguments relating to the requirements recited in claim 1, "McDonald discloses calculation of remaining oil life updated over a "predetermined interval", which may be measured in terms of "time" or "elapsed revolutions", during each engine operation, a counter accumulates

the number of engine (sic) over a predetermined interval (col. 4, lines 42-49 and col. 5, lines 39-46). While determining the elapsed time, one skilled in the art would readily recognize that integration of the time is done by the microprocessor 26. McDonald clearly states that the calculation of oil temperature, oil contamination and engine revolutions used to determine the reamining (sic) oil life is carried out during the time that the engine is in operation (col. 4, lines 42-49) There isn't anythin (sic) stated within the claim nor in the specification as to how the "opeation (sic) time integrator" is different from McDonald's opreation (sic) timing means." In response to Appellant's arguments relating to the requirements recited in claim 10, the Examiner stated, "McDonald et al. teaches a microprocessor 16 that is used in calculating the remianing (sic) oil life which is updated over a predetermined interval which may be measured either in terms of time or in terms of elapsed engine revolutions (col. 3, lines 51-67 and col. 4, lines 41-49). A counter is used to accumulate the number of engine revolutions over a predetermined interval (col. 5, lines 39-46). Once the counter has counter has (sic) determined the number of revolutions (in terms of time), a signal is sent (generating a time of operation signa (sic) to the indicator (col. 4, lines 40-67 and col. 5, 1-46). Therefore, the claimed "operational timer determining the time of operation of an engine of a vehicle and for generation of a time of operation signal" is met by McDonald et al.

From the Examiner's statements of the rejections of claims 1 and 10, it is difficult to discern the specific disclosures in

the McDonald et al. patent that the Examiner equates with the recited limitations of claims 1 and 10. For this reason, the Examiner was asked, at an interview that took place at the Examiner's office on June 6, 2003, to specifically identify the disclosure in the McDonald et al. patent that satisfies the requirement for an "operation time integrator means" in claim 1. The Examiner answered that this limitation was met by the disclosure of the "predetermined interval" in column 4, lines 45-49. Appellant's representative at the interview pointed out that "predetermined interval, " as used by Mc Donald et al., denotes only the brief interval during which the engine operating conditions are recorded. Appellant's representative also pointed out that no data reflecting the time of operation of the engine is collected by Mc Donald et al. and consequently, there are no signals representative of engine operating time that can be compared with a preset value for engine operating time to determine whether the oil exchange informing means is to be activated. Although these arguments had been presented to the Examiner before, the Examiner said that she now understood Appellant's position as to the deficiencies of the Mc Donald et al. disclosure vis-à-vis the requirements of claims 1 and 10.

The oil life monitoring system shown in Fig. 1 of the McDonald et al. patent, includes an engine speed sensor 18 providing engine revolutions data for diesel engine 12 to counter 40 in controller 14. The controller also receives data from coolant temperature sensor 16 and air temperature sensor 20. When

the need for an oil change is determined, the controller activates indicator 14.

The McDonald et al. system monitors the operation of the engine and determines, from the number of engine revolutions and the severity of the engine service, the degradation of the engine oil. The number of engine revolutions is determined from the data provided to the controller 14 by the engine speed sensor 18, while the severity of the engine service is determined, at least in part, by the data provided to the controller from the temperature sensors 16 and 20. During periods of engine operation, the controller adjusts the measured number of engine revolutions based on the severity of operation to yield an effective engine revolutions value. At the start of service after an oil change, the effective engine revolutions value is subtracted from a stored maximum number of revolutions, yielding a remaining allowed revolutions value. Subsequently, the effective engine revolutions value is determined and subtracted from the remaining allowed revolutions value, yielding an updated remaining allowed revolutions value. This process occurs repetitively during each period of engine operation, resulting in a continually decreasing remaining allowed revolutions value. When the remaining allowed revolutions value decreases below a predetermined threshold value, the operator is alerted to the need for an oil change. As correctly observed by the Examiner, the McDonald et al. patent also discloses, in column 5, lines 2-6, using miles traveled by the vehicle since the previous oil change as a determinant for activating a "change oil" signal.

Claim 1 recites a combination of elements including "operation time integrator means for integrating operation times of an engine mounted on a vehicle," as well as "controlling means" that makes use of signals from an odometer means and the operation time integrator means." Despite the statements of the Examiner, there is simply no disclosure in the McDonald et al. patent of any element or means that can fairly meet these limitations. As Appellant has observed, the system disclosed in the McDonald et al. patent does not perform the function of "integrating operating times" and does not incorporate a "controlling means" that uses "an integrated value of the operation times" as a factor for starting the "oil exchange informing means." It is true, as pointed out by the Examiner, that there is mention of "predetermined intervals" in McDonald et al. However, these predetermined intervals are simply time periods during which an assessment of engine revolutions, engine oil temperature and engine oil contamination is performed. The assessments performed during these time periods do not yield data reflecting the time that the engine has been in operation. As a consequence, there is no "integrated value of the operation times" available for use in the McDonald et al. system as a factor for providing an activating signal to the oil exchange indicator. The Examiner's statement in the Advisory Action, "While determining the elapsed time, one skilled in the art would readily recognize that integration of the time is done by the microprocessor 26," is speculation that is not supported by any concrete disclosure in McDonald et al.

Claim 10 recites a combination of elements including "an operational timer determining the time of operation of an engine of a vehicle and for generating a time of operation signal," as well as a "controller" that makes use of a time of operation signal for providing a signal for activating the oil exchange indicator. The arguments advanced above to show that the disclosure in McDonald et al. cannot meet the requirements of claim 1 are applicable as well to claim 10. The Examiner's statement in the Advisory Action, "Once the counter has counter has (sic) determined the number of revolutions (in terms of time), a signal is sent (generating a time of operation signa (sic) to the indicator (col. 4, lines 40-67 and col. 5, 1-46). Therefore, the claimed "operational timer determining the time of operation of an engine of a vehicle and for generation of a time of operation signal" is met by McDonald et al." is at odds with the McDonald et al. disclosure. The counted revolutions of the engine obviously cannot be equated with the time of engine operation: During high speed engine operation, a particular number of revolutions would occur in a period of engine operation that would be short compared to the time period required for the same number of revolutions during low speed engine operation. Again, there is simply no disclosure in McDonald et al. of using time of engine operation as a factor for activating the oil exchange indicator.

As to the requirements recited in claims 2 and 11, there is no disclosure or suggestion in McDonald et al. of storing in a controller a plurality of preset integrated values for either

operation time or travel distance, and there is no disclosure or suggestion in McDonald et al. of rewriting any preset value to another preset value.

As to the requirements recited in claims 5 and 14, there is no disclosure or suggestion in McDonald et al. of using a microcomputer for storing a plurality of preset values for travel distances and operation time.

As to the requirements recited in claims 7 and 16, there is no suggestion in McDonald et al. using a preset value for operation time, much less such a value that is related to the degree of degradation of oil.

As to the requirements recited in claims 9 and 18, there is no disclosure or suggestion in McDonald et al. of using an integrated value of the operating time.

The Raffa et al. patent, cited by the Examiner for its disclosure of an odometer and illuminated indicators, obviously is of no use for curing the deficiencies of the McDonald et al. disclosure vis-à-vis the requirements of Appellant's claims.

VII. CONCLUSION

For reasons presented above, Appellant asserts that the Examiner's rejection of claims 1-18, as stated in the Final Rejection is clearly in error and should be reversed

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The required Appeal Brief Fee in the amount of $320.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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0505-0841P

Attachment: Appendix - Claims Appealed

APPENDIX - CLAIMS APPEALED

1. An oil exchange timing indicating apparatus for a vehicle, comprising:

odometer means for integrating travel distances of the vehicle;

operation time integrator means for integrating operation times of an engine mounted on the vehicle;

oil exchange informing means for informing a user of exchange timing of oil; and

controlling means for starting, when either an integrated value of the travel distances or an integrated value of the operation times, based on signals from said odometer means and said operation time integrator means exceeds a preset value, said oil exchange informing means to inform the user of the exchange timing of oil.

2. The oil exchange timing indicating apparatus according to claim 1, wherein said controlling means stores a plurality of distinct preset integrated values relating to each of said integrated value of travel distance and operation time, and said controlling means receives, when said integrated value exceeds a smaller preset integrated value and the exchange of oil is carried out, an oil exchange signal to rewrite a first predetermined preset integrated value to a second predetermined preset integrated value successively.

3. The oil exchange timing indicating apparatus according to claim 2, wherein said oil exchange signal is generated by operating a reset switch mounted on the vehicle.

4. The oil exchange timing indicating apparatus for a vehicle according to claim 1, wherein said oil exchange informing means includes a light that is selectively illuminated for informing a user of the exchange timing of oil.

5. The oil exchange timing indicating apparatus for a vehicle according to claim 1, wherein said controlling means includes a microcomputer for storing a plurality of preset values for the travel distances and the operation time and for integrating the preset values for the travel distances and the operation time to provide an output for advising a user of the exchange timing of oil.

6. The oil exchange timing indicating apparatus for a vehicle according to claim 1, wherein a preset value for the travel distances is set based on a relationship between the travel distances and the degree of degradation of oil.

7. The oil exchange timing indicating apparatus for a vehicle according to claim 1, wherein a preset value for the operation time is set based on a relationship between the operation time and the degree of degradation of oil.

8. The oil exchange timing indicating apparatus for a vehicle according to claim 6, wherein when the integrated value of the travel distance exceeds a corresponding value, a user is advised of the exchange time of oil.

9. The oil exchange timing indicating apparatus for a vehicle according to claim 7, wherein when the integrated value of the operating time exceeds a corresponding value, a user is advised of the exchange time of oil.

10. An oil exchange timing indicating apparatus for a vehicle, comprising:

an odometer for determining travel distances of a vehicle and for generating a travel distance signal;

an operational timer determining the time of operation of an engine of a vehicle and for generating a time of operation signal;

oil exchange indicator for informing a user of an exchange time for oil; and

a controller for comparing at least one of a travel distance and a time of operation based on signals from said odometer and said time of operation as compared to a preset value for the travel distance and the time of operation, and for providing a signal to the oil exchange indicator inform the user of the exchange timing of oil.

11. The oil exchange timing indicating apparatus according to claim 10, wherein said controller stores a plurality of distinct preset integrated values relating to each of said value of travel distance and operational time, and said controller receives, when said value exceeds a smaller preset integrated value and the exchange of oil is carried out, an oil exchange signal to rewrite a first predetermined preset value to a second predetermined preset value successively.

12. The oil exchange timing indicating apparatus according to claim 11, wherein said oil exchange signal is generated by operating a reset switch mounted on the vehicle.

13. The oil exchange timing indicating apparatus for a vehicle according to claim 10, wherein said oil exchange indicator includes a light that is selectively illuminated for informing a user of the exchange timing of oil.

14. The oil exchange timing indicating apparatus for a vehicle according to claim 10, wherein said controller includes a microcomputer for storing a plurality of preset values for the travel distances and the time of operation and for integrating the preset values for the travel distances and the time of operation to provide an output for advising a user of the exchange timing of oil.

15. The oil exchange timing indicating apparatus for a vehicle according to claim 10, wherein a preset value for the travel distances is set based on a relationship between the travel distances and the degree of degradation of oil.

16. The oil exchange timing indicating apparatus for a vehicle according to claim 10, wherein a preset value for the time of operation is set based on a relationship between the time of operation and the degree of degradation of oil.

17. The oil exchange timing indicating apparatus for a vehicle according to claim 15, wherein when the integrated value of the travel distance exceeds a corresponding value, a user is advised of the exchange time of oil.

18. The oil exchange timing indicating apparatus for a vehicle according to claim 16, wherein when the integrated value of the operating time exceeds a corresponding value, a user is advised of the exchange time of oil.